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## **Reversible true myocardial hibernation**

Fiechter, Michael ; Fuchs, Tobias A ; Stehli, Julia ; Jacobs, Stephan ; Falk, Volkmar ; Kaufmann, Philipp A

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approach to patient care, and a growing practice in transapical access have made possible the high procedural success rate associated with this therapy. When technically successful, the clinical outcomes are reasonable and are without the significant operative mortality rates associated with re-operation. Continued technological and procedural advances and increasing experience will further improve the success of transcatheter therapy, reduce its risk of complications, and in turn, may improve patient survival.

For the high-risk symptomatic PVL patient, percutaneous closure is a viable therapeutic strategy to surgical PVL repair.

**Conflict of interest:** none declared.

## References

The list of references is available in the online version of this paper.

## CARDIOVASCULAR FLASHLIGHT

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## Reversible true myocardial hibernation

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Emergency invasive coronary angiography for non-ST-elevation myocardial infarction revealed an occluded (Panel A) left anterior descending artery (LAD) and apical akinesia with reduced global ejection fraction (EF = 35%) in an 83-year-old female patient and a conservative treatment strategy was amended. Coronary computerized tomography angiography revealed a non-occluded LAD with separate ostium and proximal subtotal stenosis (arrowheads, Panels B–E) causing a substantial left ventricular anteroapical blood pool defect (dark area in the volume-rendered CT image; Panel C).

<sup>18</sup>F-fluorodeoxyglucose (FDG) uptake by positron emission tomography (PET) illustrates preserved viability (Panel D) of the jeopardized hypokinetic anteroapical myocardium (Panel E). As LAD revascularization was deemed appropriate, a catheter-based intervention of the LAD was attempted again but remained unsuccessful. In view of the substantial extent of the dysfunctional but viable ischaemic territory, the patient was referred to minimally invasive direct coronary artery bypass (MIDCAB). After successful MIDCAB procedure (left internal mammary artery graft on LAD; arrows Panel F), perfusion was restored (Panel F) resulting in recovered contractility of the akinetic segments (EF = 54%).

The presented multimodality images illustrate a 'flow-metabolism mismatch' often described as classical pattern of underperfused but viable LV myocardium. In this conception, however, the reduced contractility is not considered. The combined illustration of preserved FDG uptake (Panel D) and hypokinesia (Panel E) by PET allows the only comprehensive non-invasive assessment of 'true hibernation' which is reversible and can therefore be recovered by successful revascularization. The non-invasive imaging was the key for the decision towards revascularization.

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